

Remarks

This Amendment is responsive to the **August 6, 2007** Office Action. Reexamination and reconsideration of **claims 1-38** is respectfully requested.

Summary of The Office Action

Claims 1-3, 7-9, 12-18, 23-30 and 37-38 were rejected under 35 U.S.C. §102(e) as being anticipated by Elzur et al. (Pub. No. US 2004/0093411 A1)(Elzur).

Claims 4-6, 10, 19-22 and 31-36 were rejected under 35 U.S.C. §103(a) as being unpatentable over Elzur in view of Delany et al. (US Patent 6,658,454 B1)(Delany).

Claim 11 was rejected under 35 U.S.C. §103(a) as being unpatentable over Elzur in view of Delany and Fair (Pub. No. US 2005/0154825 A1)(Fair).

The Claims Patentably Distinguish Over the References of Record

35 U.S.C. §102

Claims 1-3, 7-9, 12-18, 23-30 and 37-38 were rejected under 35 U.S.C. §102(c) as being anticipated by Elzur. For a 35 U.S.C. §102 reference to anticipate a claim, the reference must teach every element of the claim. Section 2131 of the MPEP recites:

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Here, the reference cited in the Office Action, Elzur, does not teach every element of the rejected claims. Elzur is directed at a multi-tier data center that may handle multiple different traffic types over a single fabric. (Elzur, Page 1, Abstract). The data center produces systems with substantial power and space capabilities because the first tier may interface with secondary tiers to improve performance and reduce cost and complexity. (Elzur, Page 3, Paragraph [0034]). However, Elzur says nothing about pre-configuring a topology of nodes to communicate via a preferred network protocol.

Elzur describes a system and method for network interfacing. (Title) The summary describes the invention as providing a “data center” that includes several tiers. [0013] Elzur boldly asserts that it describes a device that can “handle all communication needs of a computer”. [0033] These needs may be serviced by a TCP offload engine and an RDMA protocol that runs on top of TCP. [0033] The needs may also be met by a flow-through network interface card (NIC) that is optimized to minimize resources used to handle different traffic types and different interfaces. [0036] The network interface card may be multi-functional and support LAN traffic concurrently with TRP offload, iSCSI, and RDMA traffic. Clearly this RDMA and offload capable NIC is relevant to the claimed invention, but only as an example of conventional systems that do not perform pre-configured topology membership based connection management.

The Office Action relies on Fig. 6 as describing a system that includes an interface logic (e.g., SCSI [0043]). However, this SCSI interface does not appear able to pre-configure a topology of nodes as claimed and described. While the SCSI interface can “operate directly on application data and run complete ... protocol stacks,” [0006], it

is not described as being able to pre-configure a topology of nodes as claimed and described.

The Office Action asserts that Fig. 6 and [0041] teach pre-configuring a topology of nodes. This figure, this paragraph, and indeed the entire reference only teach conventional SCSI processing and are completely silent about pre-configuring as claimed and described. For at least this reason, independent claims 1, 17, 18, and 23 are not anticipated by Elzur and are in condition for allowance. Accordingly, dependent claims 2-3, 7-9, 12-16, and 24-26 are similarly not anticipated and are in condition for allowance.

The Office Action asserts that the command descriptor block (CDB) described in [0043] and [0008] is a mapping logic that can produce a mapping between a resource and a port on a first node. This is incorrect. A CDB is a data structure and/or interface upon which or through which actions may be performed. It is not a logic that does things. Therefore it cannot possibly produce a mapping. It may store some data related to a mapping or allow the passing of some mapping data, but it cannot produce a mapping. The Office Action also asserts that the CDB selectively provides mapping data to a second node. This is also incorrect. Since the CDB does not produce a mapping, it cannot possibly provide that mapping to a second node. Even if the CDB does store or permit the passage of a mapping that is provided to a second node, which it does not, it does not provide this data selectively. To the extent the CDB provides any data, it does so non-selectively, according to conventional approaches that are unaware of pre-configured topology based connection management.

The Office Action also asserts that the CDB selectively establishes a connection that facilitates the second node accessing the resource through the port [0041] using the preferred network protocol. This is also incorrect. Fig. 6 and the CDB merely describe an iSCSI that may provide control and data transfer functions, but not selective connection establishment over a preferred protocol. The data transfer portion may build iSCSI protocol data units (PDUs) from the SCSI CDBs it gets, but this is not selectively establishing a connection over a preferred protocol as claimed and described. This is using a connection established in a standard way to move data structures (e.g., PDUs, CDBs) in a standard way. The data structures and/or interfaces are not logics. They are

just data being moved around and/or the portals through which they move. For at least this additional reason independent claims 1 and 17 are not anticipated by Elzur and are, therefore, in condition for allowance. Accordingly, dependent claims 2-16 and 18 are also not anticipated and are in condition for allowance.

The Office Action asserts that [0024] teaches a connection management logic that controls where the mapping data will be provided and whether the connection will be established. This is incorrect. The Office Action relies on the converged network controller (CNC) illustrated in Fig. 7 and described in [0043]. The CNC may construct TCP segments, compute a CRC, insert a marker, and so on. However, the CNC does not control whether the mapping logic will provide mapping data and/or establish a connection. It simply does standard processing like that associated with prior art systems. For at least this additional reason, independent claims 1 and 17 are not anticipated by Elzur and are in condition for allowance. Accordingly, dependent claims 2-16 and 18 are also not anticipated and are in condition for allowance.

Independent Claim 1

Claim 1 recites a system comprising an interface logic configured to pre-configure a topology of nodes. The Office Action cites Elzur Fig. 6, and [0041], line 5, and [0010], line 9 as teaching the claim element. (Office Action, Page 2). However, the cited text does not teach the claim limitation. Figure 6 of Elzur teaches a multi tier architecture data center that may handle different traffic types over a single fabric. (Elzur, page 3, paragraph [0039]). However, Figure 6 fails to teach pre-configuring a topology of nodes. Elzur paragraph [0041], line 5 and paragraph [0010], line 9 also fail to teach pre-configuring a topology of nodes. The text mentions small computer system interface (SCSI). SCSI is a set of standards for physically connecting and transferring data between computers and peripheral devices. However, the cited text makes no mention of pre-configuring a topology of nodes.

Claim 1 also recites a mapping logic. The Office Action cites Elzur paragraph [0043], line 2 and paragraph [0008], lines 5-6 as teaching a mapping logic. However, the CDB taught in the citing text of Elzur is not the mapping logic of claim 1. A CDB or command descriptor block is a block of bytes used in SCSI to send commands. Sending

commands in SCSI does not anticipate a mapping logic. Therefore, Elzur does not anticipate claim 1, leaving it in condition for allowance.

Claim 2

This claim depends from claim 1, which has been shown not to be anticipated and thus this claim is similarly not anticipated. Furthermore, this claim recites the additional elements of acquiring a node identifier and topology configuration choice data. The Office Action asserts that the CDB and context for a connection described in [0043] describe the additional elements. This is incorrect. Since Elzur is not concerned with pre-configuring a topology, it follows that Elzur does not teach acquiring identifiers and configuration choice data and then pre-configuring based on this data. For this additional reason this claim is not anticipated and is in condition for allowance.

Claim 7

This claim depends from claim 2, which has been shown not to be anticipated and thus this claim is similarly not anticipated. Furthermore, this claim further characterizes the topology data. Since Elzur does not process topology data as claimed and described, it follows that Elzur does not further characterize this missing data. In particular, Elzur is completely silent concerning specifying a fallback network protocol and a fallback path. The rejection simply refers to Fig. 6, which shows neither of these elements. For this additional reason this claim is not anticipated and is in condition for allowance.

Claim 8

This claim depends from claim 1, which has been shown not to be anticipated and thus this claim is similarly not anticipated. Furthermore, this claim recites the additional element of the interface logic controlling resource control actions. To the extent that any of these actions are controlled by the system in Elzur, they appear to be controlled by a central processing unit on a mother board, not on an RNIC as claimed and described. For this additional reason this claim is not anticipated and is in condition for allowance.

Claim 14

This claim depends from claim 2, which has been shown not to be anticipated and thus this claim is similarly not anticipated. Furthermore, this claim recites the additional element of having the connection management logic exert its control based on analyzing topology data in combination with other data (e.g., time of day, load,...). Elzur does not even analyze basic topology data. Therefore it follows that Elzur does not analyze topology data in light of additional factors (e.g., time of day). For this additional reason this claim is not anticipated and is in condition for allowance.

Claim 17

This claim recites the interface logic, mapping logic, and connection management logic of claim 1, which has been shown not to be anticipated, along with additional elements described in claims 2 and 3. Both claims 1 and 2 have been shown to be not anticipated and thus this claim is similarly not anticipated. Since this claim recites the connection management logic exerting its control based on analysis of topology data including a node identifier and topology configuration choice, for this additional reason this claim is not anticipated and is in condition for allowance.

Independent Claim 18

Claim 18 describes a method that includes acquiring a set of node identifiers, establishing a pre-configured topology, and providing membership data. The Office Action asserts that Figure 6 & 7, the CDB, and paragraphs [0043] and [0023] teach all these elements. While these figures and paragraphs clearly describe a network and a method for network interfacing, they are silent concerning establishing a pre-configured topology of nodes as claimed and described. Therefore it follows that they are additionally silent about providing membership data concerning the pre-configured topology. For at least these reasons claim 18 is not anticipated and is in condition for allowance.

Independent Claim 23

Claim 23 describes a method that includes acquiring a set of node identifiers, establishing a pre-configured topology, distributing membership data about the pre-configured topology to members of the pre-configured topology, selectively adding or deleting a node and then redistributing membership data, and selectively managing a resource and then once again redistributing membership data. Elzur merely describes a computer network and a method for interfacing in the network. Therefore Elzur teaches nothing about pre-configuring a topology. Since it is silent about a pre-configured topology, it follows that Elzur also does not describe (re)distributing topology data as nodes are added/deleted and/or as resources are managed. Claim 23 is therefore not anticipated for at least these reasons and are in condition for allowance. Accordingly, dependent claims 24-26 are also not anticipated for at least these reasons and are also in condition for allowance.

Claim 25

This claim depends from claim 23, which has been shown not to be anticipated and thus this claim is similarly not anticipated. Furthermore, this claim recites the additional element of establishing both a preferred and a fallback network protocol and path. To the extent that Elzur describes any protocol or path, it is limited to a single protocol and path per connection request and thus claim 25 is not anticipated for at least this additional reason, leaving claim 25 in condition for allowance.

Claim 26

This claim depends from claim 23, which has been shown to be not anticipated and thus this claim is similarly not anticipated. Furthermore, this claim recites the additional element of managing the networking resource by enabling an off-load capability, aging an off-loaded connection, converting an idle connection to a non-off-load mode, and converting a connection between an RDMA mode and a non-RDMA mode. Elzur describes a flow through NIC that may perform RDMA or off-load capability. However, these states appear to be static in the reference and not individually dynamically manageable as claimed and

described in claim 26. For this additional reason this claim is not anticipated and is in condition for allowance.

Independent Claim 27

Claim 27 recites a method that includes selectively not establishing a connection between nodes if a node is determined not to be a member of a pre-configured topology. Elzur does not concern a pre-configured topology as claimed and described. Therefore, it clearly does not decide on connection establishment based on topology membership. The reference simply describes a converged network controller (CNC) that presumably handles TCP/IP requests in a conventional manner that does not include pre-configured topology membership processing. For at least this reason claim 27 is not anticipated and is in condition for allowance. Accordingly, dependent claims 28-29 are similarly not anticipated and are in condition for allowance.

Independent Claim 30

Claim 30 stands rejected using the same rationale as claim 27 and is, therefore, not anticipated for the same reasons provided above. Additionally, claim 30 is a Beauregard claim while Elzur does not appear to describe a computer-readable medium on which any set of instructions that when executed can cause a processor to perform any method, let alone a topology membership-based connection management method as claimed and described. For this additional reason claim 30 is not anticipated and is in condition for allowance.

Independent Claim 37

Claim 37 stands rejected using the same rationale as claim 27 and is, therefore, not anticipated for the same reasons provided above. Additionally, claim 37 recites a system claim while claim 27 is a method claim. Therefore this rejection is improper and should be withdrawn, leaving claim 37 not anticipated and in condition for allowance.

Claim 38

This claim was “rejected by reference” to claims 27 and 37. Claim 27 is a method claim and claim 37 is a system claim. Claim 38 concerns neither a system nor a method, but rather an API for communicating group data and resource management data, neither of which are elements of claims 27 or 37. This “rejection by reference” does not provide Applicant with an adequate opportunity to reply and is, therefore, improper. Therefore this rejection should be withdrawn, leaving claim 38 not anticipated and in condition for allowance.

35 U.S.C. §103

Claims 4-6, 10, 19-22 and 31-36 were rejected under 35 U.S.C. §103(a) as being unpatentable over Elzur in view of Delany. Additionally, **claim 11** was rejected under 35 U.S.C. §103(a) as being unpatentable over Elzur in view of Delany and Fair. To establish a prima facie case of 35 U.S.C. §103 obviousness the prior art reference (or references when combined) must teach or suggest all the claim limitations. MPEP 2143.03 Here, the criteria described in MPEP 2143.03 is not satisfied since the combination of references does not teach or suggest all the claim limitations. None of the references, alone and/or in combination, teach anything to do with pre-configuring a topology of nodes and selectively making connection requests on either a preferred or fallback protocol based on membership in the pre-configured topology. Thus, none of the claims are obvious for at least this reason.

Claims 4-6 depend from claim 1, which has been shown to be not anticipated by Elzur. Therefore, claims 4-6 cannot be obvious in light of Elzur and Delany. Claim 4 concerns a system that performs a connection management based on membership in a pre-configured topology. Neither Elzur nor Delany concern a pre-configured topology. Claim 4 further characterizes an identifier that can be processed to determine topology membership. Since neither Elzur nor Delany process topology membership, it follows that neither further characterizes an identifier processed to determine membership.

The Office Action asserts that Delany teaches that a node identifier may be a value stored on a Universal Serial Bus (USB) token. The Office Action cites col. 7, line 47 to support this assertion. The passage reads “the system 200 may also communicate with local

occasionally-connected devices ... which may include an RS-232 serial port, a USB interface, or the like.” While the words USB appear in the passage, both the passage and the reference are entirely void of any description of a node identifier stored on a USB token. For this additional reason this claim is not obvious and is in condition for allowance.

Claim 6

This claim depends from claim 2, which has been shown to be not anticipated, and thus this claim cannot be obvious over the same reference in light of Delany. Furthermore, this claim recites the additional elements of pre-configuring including establishing both preferred and fallback protocols and paths. The Office Action asserts that Delany teaches establishing both preferred and fallback protocols and paths. This is unsupported and incorrect. Delany describes how email clients can be connected over a network to at least one message transfer agent (MTA) (col. 1, lines 28-31) and how a mailing list manager should have reliable fallback MTAs available (col. 47, lines 12-30). A description of configuring an email network with a fallback MTA in no way touches on topology pre-configuring that includes establishing both preferred and fallback protocols and paths. For this additional reason claim 6 is not obvious and is in condition for allowance.

Claim 10

This claim depends from claim 1, which has been shown to be not anticipated and therefore this claim cannot be obvious over the same reference in light of Delany. Furthermore, claim 10 recites the mapping logic establishing a fallback connection according to a second protocol that is different from a first requested protocol. While Delany describes having a fallback MTA available for email, this does not teach switching protocols to establish a connection on a second protocol after a first connection request using a first protocol has been denied. For this additional reason this claim is not obvious and is in condition for allowance.

Claim 19

This claim depends from claim 18, which has been shown to be not anticipated and thus this claim cannot be obvious over the same reference and Delany. Furthermore, this claim recites receiving node identifiers from a human through a GUI, from a scripting system, or from a policy-based system. The Office Action admits that Elzur does not teach receiving node identifiers from any of these sources. The Office Action then relies on Delany to cure the deficiency in Elzur. The Office Action asserts that Delany teaches a GUI and therefore it would be obvious to combine the references to facilitate receiving user commands and data. While interesting, this is irrelevant because the claim concerns receiving node identifiers associated with pre-configured topology membership. For this additional reason this claim is not obvious and is in condition for allowance.

Claim 20

This claim depends from claim 18, which has been shown to be not anticipated and thus this claim cannot be obvious over the same reference and Delany. Furthermore, this claim concerns performing a connection management based on membership in a pre-configured topology. Neither Elzur nor Delany concern a pre-configured topology. Claim 20 further characterizes an identifier that can be processed on determining topology membership. Since neither Elzur nor Delany process topology membership, it follows that neither further characterizes an identifier processed to determine membership.

The Office Action asserts that Delany teaches that a node identifier may be a value stored on a Universal Serial Bus (USB) token. The Office Action cites col. 7, line 47. The passage reads “the system 200 may also communicate with local occasionally-connected devices ... which may include an RS-232 serial port, a USB interface, or the like.” While the words USB appear in the passage, both the passage and the reference are entirely void of any description of a node identifier stored on a USB token. For this additional reason this claim is not obvious and is in condition for allowance.

Claim 21

This claim depends from claim 18, which has been shown to be not anticipated and thus this claim cannot be obvious over the same reference and Delany. Furthermore, this claim recites the additional elements of pre-configuring including establishing both preferred and fallback protocols and paths. The Office Action asserts that Delany teaches establishing both preferred and fallback protocols and paths. This is unsupported and incorrect. Delany describes how email clients can be connected over a network to at least one message transfer agent (MTA) (col. 1, lines 28-31) and how a mailing list manager should have reliable fallback MTAs available (col. 47, lines 12-30). A description of configuring an email network with a fallback MTA in no way touches on topology pre-configuring that includes establishing both preferred and fallback protocols and paths. For this additional reason claim 21 is not obvious and is in condition for allowance.

Claim 22

This claim was rejected by reference to claims 18 and 21 and is, therefore, not obvious for the same reasons provided above.

Independent Claim 31

This claim recites a method that includes several actions. The actions include receiving a mapping request, selectively providing mapping data to the requester upon determining that it is a member of a pre-configured topology, receiving a connection request from the request and selectively establishing a connection using a first protocol upon determining that the requester is a member of the pre-configured topology. Note that there are multiple steps. The method listens at a well-known port for a mapping request and only hands over the mapping data after determining that the requester is entitled to it. Then, the method only provides a connection when an additional request has been validated. This differs from the conventional approaches hinted at in Elzur.

The method also includes receiving a fallback connection request to establish a connection using a second (e.g., fallback) protocol, where the connection will not provide

access to a resource that would be available over the first (e.g., preferred) protocol over the first (e.g., preferred) connection.

The Office Action simply asserts that the rejections of claims 1 and 10 provide rationale for this rejection. This “rejection by reference” yields an incomplete examination and does not provide Applicant with an adequate opportunity to reply since not every element of claim 31 has been considered. Specifically, claim 31 describes the fallback connection not providing access to a resource that is reachable through the first protocol. In addition to the procedural problem with the rejection, there is a substantive problem. As has been described above, neither Elzur nor Delany teach establishing a connection using a fallback (different) protocol that does not give access to a resource that is available through a first protocol. For this additional reason this claim is not obvious and is in condition for allowance.

Claim 32

This claim depends from claim 31, which has been shown to be not obvious and thus this claim is similarly not obvious. Furthermore, this claim recites establishing a connection based on the availability of a resource. Neither Elzur nor Delany describe this element and no citation is provided to any portion of either reference to support the rejection. For this additional reason this claim is not obvious and is in condition for allowance.

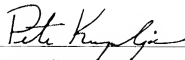
Independent Claim 36

This claim is a Beauregard claim corresponding to independent claim 31. Claim 31 has been shown to be not obvious and therefore this claim is similarly not obvious. Furthermore, this is a computer-readable medium claim and neither Elzur nor Delany appear to describe storing computer executable instructions on a computer-readable medium. For this additional reason this claim is not obvious and is in condition for allowance.

Conclusion

For the reasons set forth above, **claims 1-38** patentably and unobviously distinguish over the references and are allowable. An early allowance of all claims is earnestly solicited.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Pete Kraguljac", is written over a horizontal line.

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